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| APPLICATION NO. | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO. | CONFIRMATION NO. |
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| 09/892,347      | 06/27/2001  | Donald Henry Willis  | PU010055            | 3517             |

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EXAMINER

ANYASO, UCHENDU O

ART UNIT PAPER NUMBER

2675

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Please find below and/or attached an Office communication concerning this application or proceeding.

|                              |                  |                      |
|------------------------------|------------------|----------------------|
| <b>Office Action Summary</b> | Application No.  | Applicant(s)         |
|                              | 09/892,347       | WILLIS, DONALD HENRY |
|                              | Examiner         | Art Unit             |
|                              | Uchendu O Anyaso | 2675                 |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

1) Responsive to communication(s) filed on 27 June 2001.

2a) This action is FINAL. 2b) This action is non-final.

3) Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

4) Claim(s) 1-15 is/are pending in the application.

4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.

5) Claim(s) \_\_\_\_\_ is/are allowed.

6) Claim(s) 1-15 is/are rejected.

7) Claim(s) \_\_\_\_\_ is/are objected to.

8) Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

9) The specification is objected to by the Examiner.

10) The drawing(s) filed on \_\_\_\_\_ is/are: a) accepted or b) objected to by the Examiner.

Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).

11) The proposed drawing correction filed on \_\_\_\_\_ is: a) approved b) disapproved by the Examiner.

If approved, corrected drawings are required in reply to this Office action.

12) The oath or declaration is objected to by the Examiner.

#### Priority under 35 U.S.C. §§ 119 and 120

13) Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).

a) All b) Some \* c) None of:

1. Certified copies of the priority documents have been received.

2. Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.

3. Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

14) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. § 119(e) (to a provisional application).

a) The translation of the foreign language provisional application has been received.

15) Acknowledgment is made of a claim for domestic priority under 35 U.S.C. §§ 120 and/or 121.

#### Attachment(s)

1) Notice of References Cited (PTO-892) 4) Interview Summary (PTO-413) Paper No(s). \_\_\_\_\_.

2) Notice of Draftsperson's Patent Drawing Review (PTO-948) 5) Notice of Informal Patent Application (PTO-152)

3) Information Disclosure Statement(s) (PTO-1449) Paper No(s) \_\_\_\_\_.

6) Other: \_\_\_\_\_

## DETAILED ACTION

1. **Claims 1-15** are pending in this action.

### *Claim Rejections - 35 USC § 102*

2. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

3. **Claims 1, 6 and 11** and are rejected under 35 U.S.C. 102(e) as being anticipated by *Gadeyne et al* (U.S. Patent 6,359,663).

Regarding **independent claims 1 and 6**, Gadeyne teaches a method of reducing artifacts in an image display by teaching the conversion or generation of a video signal so that motion artifacts which are caused by the difference in luminance response times for rise and decay are canceled out (see Abstract; column 2, lines 45-51). This is accomplished by displaying images of TV pictures and/or data information on a video display system equipped with a liquid crystal display device (column 1, lines 8-13).

Furthermore, Gadeyne teaches how his invention uses gamma-correctors (35, 40) (see column 7, lines 22-45, figure 13 at 35, 40).

Furthermore, Gadeyne teaches how to slew rate limit the video signals by process delaying a video signal in order to match the processing delays and reduce artifacts wherein a first video signal is converted into a second video signal so that the faster luminance response of a picture element of the first video signal is slowed down in order to match the luminance

response in time and amplitude to the known slower luminance response of the same or another picture element for the opposite change of the first video signal (column 3, lines 35-42). Also, Gadeyne teaches the conversion of a first video signal to the second video signal so that the slower luminance response of a picture element to a change of the first video signal is accelerated in order to match the luminance response in time and amplitude to the known faster luminance response of the same or another picture element for the opposite change of the first video signal (column 3, lines 42-49).

Regarding **claim 11**, in further discussion of claims 6, Gadeyne teaches how his invention uses gamma-correctors (35, 40) (*see* column 7, lines 22-45, figure 13 at 35, 40).

Furthermore, Gadeyne teaches how to combine a slew rate limit and processing delay of a video signals in order to match the processing delays and reduce artifacts by teaching how to convert a first video signal into a second video signal so that the faster luminance response of a picture element of the first video signal is slowed down in order to match the luminance response in time and amplitude to the known slower luminance response of the same or another picture element for the opposite change of the first video signal (column 3, lines 35-42).

Also, Gadeyne teaches the conversion of a first video signal to the second video signal so that the slower luminance response of a picture element to a change of the first video signal is accelerated in order to match the luminance response in time and amplitude to the known faster luminance response of the same or another picture element for the opposite change of the first video signal (column 3, lines 42-49).

***Claim Rejections - 35 USC ' 103***

4. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

5. **Claims 2, 3 and 5** are rejected under 35 U.S.C. 103(a) as being unpatentable over *Gadeyne et al* (U.S. Patent 6,359,663) in view of *Kunzman* (U.S. 6,392,717).

Regarding **claims 2**, in further discussion of claims 1, Gadeyne teaches how his invention uses gamma-correctors (35, 40) (see column 7, lines 22-45, figure 13 at 35, 40). However, Gadeyne does not teach red, blue or green gamma corrected video drive components. On the other hand, Kunzman teaches how his invention gamma corrects a video drive signal by teaching how an input is received at a video processor 32 which then performs functions such as color-space conversion, degamma processing and error diffusion functions wherein the display device is enabled to perform gamma correction on the input signal (column 5, line 59 through column 6, line 8, figure 3 at 32) such that the image data is converted into red, green and blue data prior to display (column 11, line 41 through column 12, line 25; *see also* column 5, lines 1-56).

Thus, it would have been obvious to a person of ordinary skill in the art to combine Gadeyne and Kunzman because while Gadeyne teaches how his invention uses gamma-correctors (35, 40) (see column 7, lines 22-45, figure 13 at 35, 40), Kunzman teaches how his invention gamma corrects a video drive signal which comprise red, blue and green components (column 11, line 41 through column 12, line 25; *see also* column 5, lines 1-56). The motivation

for combining these inventions would have been to design a display system capable of producing better images (*see* Kunzman at column 2, lines 37-40).

Regarding **claims 3 and 5**, in further discussion of claims 2, Gadeyne teaches how his invention uses gamma-correctors (35, 40) (*see* column 7, lines 22-45, figure 13 at 35, 40).

Furthermore, Gadeyne teaches how to combine a slew rate limit and processing delay of a video signals in order to match the processing delays and reduce artifacts by teaching how to convert a first video signal into a second video signal so that the faster luminance response of a picture element of the first video signal is slowed down in order to match the luminance response in time and amplitude to the known slower luminance response of the same or another picture element for the opposite change of the first video signal (column 3, lines 35-42).

Also, Gadeyne teaches the conversion of a first video signal to the second video signal so that the slower luminance response of a picture element to a change of the first video signal is accelerated in order to match the luminance response in time and amplitude to the known faster luminance response of the same or another picture element for the opposite change of the first video signal (column 3, lines 42-49).

6. **Claims 4, 7 and 8** are rejected under 35 U.S.C. 103(a) as being unpatentable over *Gadeyne et al* (U.S. Patent 6,359,663) in view of *Medin et al* (U.S. 5,936,621).

Regarding **claims 4, 7 and 8**, in further discussion of claims 1 and 6, Gadeyne does not teach how to deinterlace a video signal. On the other hand, Medin teaches flicker filter circuits which function to deinterlace the video signals in order to reduce the flicker by providing a

summation of the input data in order to reduce the high frequency component of the video line being display (*see column 3, lines 40-61*).

Thus, it would have been obvious to a person of ordinary skill in the art to combine Gadeyne and Medin's inventions because while Gadeyne teaches how to combine a slew rate limit and processing delay of a video signals in order to match the processing delays and reduce artifacts, Medin teaches flicker filter circuits which function to deinterlace the video signals by reducing the flicker by providing a summation of the input data in order to reduce the high frequency component of the video line being display (*see column 3, lines 40-61*). The motivation for combining these inventions would have been to reduce flicker in the display system (*see column 3, lines 40-61*).

Furthermore, Medin discloses how flicker filters 50 process color portions of the video signal 30 (column 5, lines 6-15).

Furthermore, Medin teaches how the input operates in frames of input data wherein the flicker reduction circuit comprises a synchronization circuit 82 and an adder/subtractor 88 (column 5, lines 55-60, figure 7 at 82, 88) such that the synchronization function 82 accepts a linear progression of video lines 80 as input, and outputs a sequence of at least two synchronized video lines, shown as video lines n to n+m; in a preferred embodiment, video lines n+1 to n+m are progressively delayed so that their sequence of control variables are synchronized in time with the control variables in video line n (column 5, lines 61 through column 6, line 3, figure 7 at 80, 82).

Furthermore, Gadeyne teaches how his invention uses gamma-correctors (35, 40) (*see column 7, lines 22-45, figure 13 at 35, 40*).

7. **Claims 9 and 10** are rejected under 35 U.S.C. 103(a) as being unpatentable over *Gadeyne et al* (U.S. Patent 6,359,663) in view of *Medin et al* (U.S. 5,936,621), as in claim 8, and further in view of *Kunzman* (U.S. 6,392,717).

Regarding **claim 9**, in further discussion of claims 8, Gadeyne teaches how his invention uses gamma-correctors (35, 40) (*see* column 7, lines 22-45, figure 13 at 35, 40). However, Gadeyne and Medin do not teach red, blue or green gamma corrected video drive components. On the other hand, Kunzman teaches how his invention gamma corrects a video drive signal by teaching how an input is received at a video processor 32 which then performs functions such as color-space conversion, degamma processing and error diffusion functions wherein the display device is enabled to perform gamma correction on the input signal (column 5, line 59 through column 6, line 8, figure 3 at 32) wherein the image data is converted into red, green and blue data prior to display made up of a source of light comprising one white light source and a color wheel with red, green, blue and clear segments (column 11, line 41 through column 12, line 25; *see also* column 5, lines 1-56).

Thus, it would have been obvious to a person of ordinary skill in the art to combine Gadeyne, Medin and Kunzman because while Gadeyne teaches how his invention uses gamma-correctors (35, 40) (*see* column 7, lines 22-45, figure 13 at 35, 40), Kunzman teaches how his invention gamma corrects a video drive signal which comprise red, blue and green components (column 11, line 41 through column 12, line 25; *see also* column 5, lines 1-56). The motivation for combining these inventions would have been to design a display system capable of producing better images (*see* Kunzman at column 2, lines 37-40).

Regarding **claim 10**, in further discussion of claims 9, Gadeyne teaches how his invention uses gamma-correctors (35, 40) (see column 7, lines 22-45, figure 13 at 35, 40).

Furthermore, Gadeyne teaches how to combine a slew rate limit and processing delay of a video signals in order to match the processing delays and reduce artifacts by teaching how to convert a first video signal into a second video signal so that the faster luminance response of a picture element of the first video signal is slowed down in order to match the luminance response in time and amplitude to the known slower luminance response of the same or another picture element for the opposite change of the first video signal (column 3, lines 35-42).

Also, Gadeyne teaches the conversion of a first video signal to the second video signal so that the slower luminance response of a picture element to a change of the first video signal is accelerated in order to match the luminance response in time and amplitude to the known faster luminance response of the same or another picture element for the opposite change of the first video signal (column 3, lines 42-49).

8. **Claims 12 and 15** are rejected under 35 U.S.C. 103(a) as being unpatentable over *Gadeyne et al* (U.S. Patent 6,359,663) in view of *Sani et al* (U.S. 6,219,101).

Regarding **claim 12**, in further discussion of claims 11, Gadeyne teaches an algebraic unit in the form of a subtractor 36, a latch in the form of a one-frame memory FM, and a second algebraic unit in the form of a first and second adder (37, 38) (see figure 13 at 36-39, column 7, lines 21-29).

However, Gadeyne does not teach a comparator that determines the outputs of the algebraic unit. On the other hand, Sani teaches an invention that relates to video signal processing and to converting video signals from a format such as RGB having sequential scanning to an interlaced scanning format as used in composite video wherein comparators (114, 116, 120) are used so as to provide 256 comparison levels (column 8, lines 23-39, figure 6 at 114, 116, 120; column 1, lines 10-13).

Thus, it would have been obvious to a person of ordinary skill in the art to combine Gadeyne and Sani's inventions because while Gadeyne teaches how to combine a slew rate limit and processing delay of a video signals in order to match the processing delays and reduce artifacts by teaching how to convert a first video signal into a second video signal so that the faster luminance response of a picture element of the first video signal is slowed down in order to match the luminance response in time and amplitude to the known slower luminance response of the same or another picture element for the opposite change of the first video signal (column 3, lines 35-42), Sani teaches an invention that relates to video signal processing and to converting video signals from a format such as RGB having sequential scanning to an interlaced scanning format as used in composite video wherein comparators (114, 116, 120) are used so as to provide 256 comparison levels (column 8, lines 23-39, figure 6 at 114, 116, 120; column 1, lines 10-13). The motivation for combining these inventions would have been to provide an efficient method of preventing flickering in a display device (column 1, lines 50-58).

Regarding **claim 15**, Sani teaches a multiplexer in the form of a 256-to-8 bit converter 128 that is connected to the comparators (114, 116, 120) (figure 6 at 128).

***Allowable Subject Matter***

9. **Claims 13 and 14** are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

***Conclusion***

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

U.S. Patent 4,855,831 to *Miyamoto et al* for a video signal processing apparatus.

U.S. Patent 6,347,161 to *Mancuso* for a non-linear image filter for filtering noise.

U.S. Patent 6,429,904 to *Sani et al* for a method for converting analog video signal to digital video signal.

U.S. Patent 6,108,053 to Pettitt et al for a method of calibrating a color wheel system having a clear segment.

U.S. Patent 6,256,425 to Kunzman for an adaptive white light enhancement for displays.

U.S. Patent 4,507,679 to Bendell for a color TV camera with four-port prism.

***Contact Information***

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Uchendu O. Anyaso whose telephone number is (703) 306-5934.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Steve Saras, can be reached at (703) 305-9720.

**Any response to this action should be mailed to:**

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**or faxed to:**

**(703) 872-9314 (for Technology Center 2600 only)**

Hand-delivered responses should be brought to Crystal Park II, 2121 Crystal Drive, Arlington, VA, Sixth Floor (Receptionist).

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the Technology Center 2600 Customer Service Office whose telephone number is (703) 306-0377.

Uchendu O. Anyaso

05/17/2003



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